Summary of ICCR Source Work Group Meeting
Winston-Salem, North Carolina
February 26, 1998
Stationary Combustion Turbine Work Group

I. Purpose

The main objectives of the meeting were as follows:

C Discuss and assure that the WG understands CC recommendations.
C Discuss MACT floor issues, identify next steps, and develop schedule to come to closure.
C Disuss Test Plan issues and identify next steps.
C Discuss Model Plant development and identify next steps.

II. Location and Date

The meeting was organized by the US Environmental Protection Agency (EPA) and was held at the Adams Mark Hotel, Winston-Salem, North Carolina. The meeting took place on February 26, 1998.

III. Attendees

Meeting attendees included representatives of the OAQPS Emission Standards Division, trade associations, industry, turbine manufacturers, and state agencies. A complete list of attendees, with their affiliations, is included as Attachment I.

IV. Summary of Meeting

The meeting consisted of discussions and presentations between WG members and public participants on selected issues which are listed below. The order of the meeting differed somewhat from the agenda provided as Attachment II. A bullet point summary of the meeting is presented as Attachment III.

The topics of discussion, in order of discussion, included the following:

C Outcome of the CC meeting
C Discussion of the revised test plan
C Discussion of removing gas-fired turbines from the ICCR process
C MACT floor determination status
C Discussion on the progress of model plant development
C Results of follow-up on HAP responses from the boiler/incinerator ICR
C Next meeting

Discussion of the Outcome of the CC Meeting

The WG reviewed the decisions of the CC meeting and discussed items which need to be developed in response to the CC decisions.

C Questions on the Status Report to the CC: Greg Adams requested that a sentence be added to the text of the status report to indicate that HAPs vs. Criteria pollutant issues will be addressed during testing.

C EPA Decision on Landfill Gas Pollutant List: Sims Roy reported that EPA plans to adopt the position of the CTWG majority stakeholders. Therefore, dioxin will not be included on the pollutant list for landfill gas-fired turbines.

C Outcome of the Pollution Prevention Subgroup: A report of the P2 subgroup is posted on the TTN under pre-meeting documents on the CC board. Chuck Solt, the CTWG representative to the P2 subgroup,outlined the progress of the P2 Subgroup. Consensus has been reached on good combustion practices. Agreement has not been reached on three other areas: inputs, operator training, and outputs. Chuck stated that he is focusing his efforts on outputs because he is concerned about the recommendation of facility-wide energy audits.

Concern was raised about a statement made during the P2 subgroup presentation at the CC meeting indicating that consensus was reached on third party certification requirements for operators. Chuck Solt said that this statement was incorrect and that consensus was not reached on this issue. CTWG members who are on the CC agreed to comment on the CC meeting minutes to ensure that they do not indicate that consensus was reached on third party certification. Chuck Solt agreed to clarify this issue with the P2 subgroup.

C Co-chairs meeting: The co-chairs meeting was held to discuss issues of common concern among various source work groups. Ted Guth, Marvin Schorr, and Sims Roy attended this meeting. The main topic of discussion was the coordination of a discussion on MACT floor issues at the CC meeting. The CTWG sat at the table with the PHWG during the MACT floor issue discussion.

C Other issues raised at the CC relevant to the CTWG: The MACT floor discussion was the main topic relevant to the CTWG. Ted Guth described the exercise on developing MACT floor for a case study in the MACT floor caucuses at the CC meeting on February 25. The conclusion reached by the caucus comprised of many CTWG members was that the MACT floor could not be set for the combustors presented in the case study. Many other groups, including the EPA subgroup, reached the same conclusion. Other members of the CTWG who attended the CC meeting discussed the results of the MACT floor exercise. Sims Roy reviewed the history of EPA’s position on MACT floor development and

stressed that documentation is required for all decisions that are made.

Other items discussed at the CC meeting include the Solid Waste definition issue. There is still a question as to whether landfill gas and digester gas are included in this definition. Work group members expressed concern that EPA's response was not put in writing. Sims Roy stated that when a final decision is made by EPA management, it will be accompanied by a written rationale.

Revised test plan

- C Sims Roy framed the discussion by indicating that the test plan that was presented at the November, 1997 meeting in Houston was revised based on the comments received by WG members. In addition, preliminary responses were made to the testing/data quality questions submitted by EPA's Emission Measurement Center (EMC).
- C Work group members who have additional comments on the test plan were asked to send them in writing to Sims Roy by March 6, 1998. Sims Roy also asked the WG to consider the EMC questions and provide input.
- C The WG agreed to present the test plan and request for funds to the CC at the April meeting.
- C The WG agreed to use lower heating value (LHV) in all calculations.
- C WG members related to Diane McConkey specific situations in which violations may occur as a result of testing. Diane will check on relief from compliance action in light of this information. Other comments were received stating that state regulators would also have to grant permission to exceed permit limitations.
- C The WG discussed the importance of turning off water or steam injection for NOx control during testing to evaluate if criteria pollutant controls exacerbate HAP emissions.
- C A new task group was formed to address detection limit issues. The task group is comprised of Chuck Solt, John Klein, Sims Roy, and Marvin Schorr. Kevin Johnson will serve as an observer.
- C Sims Roy agreed to revise the test plan to include testing with and without water or steam at one site and one test condition if the host site and local and state agencies are amenable to this.

Discussion on whether to remove gas-fired turbines from the MACT regulatory process

- C Greg Adams initiated discussion on the conclusion reached at an informal meeting attended by many WG members, which is that gas-fired turbines should be removed from regulatory consideration. This approach would enable the WG to more efficiently focus resources on the evaluation of liquid fuels. Some WG members believe that risk assessment data could be used

as a basis for excluding gas-fired turbines. A “preponderance of evidence” argument that natural gas is the fuel of choice for reducing HAP emissions could also be used.

C Sims Roy expressed general support of the WG in this effort, but stated that he did not think this approach is clearly identified under the Clean Air Act options. He requested that the WG put together a formal rationale for their recommendation.

C Diane McConkey suggested to the group that their best approach would be to proceed through the MACT process. She indicated that the group could reduce their effort in looking at gas-fired turbines, but added that EPA is required to set standards for everything that is on the list, including gas-fired combustion turbines. Several members of the group expressed the desire to take gas-fired units off the table altogether, and not to postpone setting standards for them at a later time.

C Fred Porter advised the group that the rationale they use must be within the constraints of what the statute allows. He also advised the WG to think about further refining their analysis of good combustion practices.

C A new task group was formed to develop a position paper on the concept of excluding gas-fired turbines from the MACT regulation process for presentation to the CC at the April meeting. Marvin Schorr is the task group leader; members are Greg Adams, Marc Phillips, Chuck Solt, Jerry Napierala, A.J. Cherian, Derek Furstenwerth, John Klein, Jeff Willis, Sam Allen, Mervyn Soares, and Sims Roy.

C The CTWG concurred on proceeding in parallel paths, i.e., working on the rationale for excluding gas-fired units while proceeding with the MACT floor recommendation and test plan for all fuels.

MACT Floor determination status

C Marvin Schorr reported that he would provide written comments to Gordon Brown and A.J. Cherian so that they can finalize their written summary of good operating practices.

C Sims Roy discussed the possibility of no MACT Floor. The CTWG concurred on making a closure MACT floor recommendation presentation to the CC at the April meeting. A subgroup of the MACT Floor Task Group (A.J. Cherian, Greg Adams, Marvin Schorr, and Sims Roy) will develop the MACT floor recommendation and supporting rationale for the April presentation.

Model Plant discussion

C Gordon Brown reviewed outstanding issues concerning model turbines with the WG. He will revise the table of model turbines per WG input and redistribute.

C Dan Herndon presented to the WG a draft protocol for linking model turbines to the population database. This presentation is included as Attachment IV. WG members agreed to e-mail their suggestions on linking model turbines back to the population database.

Results of Follow-up on HAP test reports identified in ICR

- Sims Roy reported that Alpha-Gamma followed up on the HAP test reports identified in the Boiler/Incinerator ICR and that no new reports were gained. Twenty-one facilities indicated that they have HAP test reports for gas turbines. None of these facilities are in the emissions database. Facilities were contacted to verify their ICR responses. One-half of the facilities contacted did not have gas turbines. Of the facilities which do have gas turbines, none have HAPs test data. Most respondents misinterpreted the question.

Next Meeting

- The next WG meeting will be a teleconference on March 18, 1998, from 1 to 3 p.m. EST. The call-in number is (919)541-4486.
- The potential agenda items include:
  - Updates on the progress of the Gas-Fired Turbine and Detection Limit Task Groups
  - Update on the rationale being developed for the MACT floor recommendation
  - Update on the test plan
  - Model plant development progress
  - Good operating practices discussion

The meeting adjourned at 4:00 pm.

These minutes represent an accurate description of matters discussed and conclusions reached and include a copy of all reports received, issued, or approved at the February 26, 1998 meeting of the Stationary Combustion Turbine Work Group.

Sims Roy

ATTACHMENT I

LIST OF ATTENDEES

Stationary Combustion Turbine Work Group Meeting
February 26, 1998
List of Attendees

Sims Roy	EPA OAQPS Emissions Standards Division
Greg Adams	Los Angeles County Sanitation District
Sam Allen	Dow Chemical Company
Gordon Brown	Exxon Chemical Company
Derek Furstenwerth	Houston Lighting and Power Company
Ted Guth	Permitting Regulatory Affairs Consultant
Peter Hill	US Naval Facilities Engineering Svc. Center
John Klein	ARCO Alaska, Inc.
Diane McConkey	EPA OMB
Jerry Napierala	Solar Turbines
Jeff Willis	Rolls Royce
Stan Coerr	Coerr Environmental
Dan Herndon	Alpha-Gamma Technologies
Keri Leach	Alpha-Gamma Technologies
Chuck Solt	Catalytica
Marc Phillips	INGAA
John Preczewski	New Jersey Dept. Of Environmental Protection
Valerie Overton	Eastern Research Group
Terry Harrison	EPA
A.J. Cherian	PG&E Gas Transmission - Northwest
Marvin Schorr	GE Industrial and Power Systems
Jim McCarthy	Gas Research Institute
Kevin Johnson	Radian
Atly Brasher	Lousiana Department of Environmental Quality
Mervyn Soares	Texaco

ATTACHMENT II

MEETING AGENDA

Tentative Agenda
Stationary Combustion Turbine Work Group
February 26, 1998 Work Group Meeting
Winston-Salem, North Carolina

Objectives	*1.*	*Update WG members on CC actions and decisions*
	2.	*Discuss MACT floor issues, identify next steps, and develop schedule to come to closure*
	3.	*Discuss Test Plan issues and identify next steps*

8:00	Open WG Meeting and Review Meeting Agenda/Objectives (S. Roy, V. Overton)
8:15	Discuss Issues Raised in Coordinating Committee (S. Roy, T. Guth, V. Overton) —Identify any questions on status report submitted to CC —Update on any EPA response to WG recommendation on Pollutant List —Outcome of TWG Support of PHWG MACT floor position —Outcome of Pollution Prevention Subgroup presentation (With C. Solt) —Outcome of Co-Chairs meeting —Other issues/decisions relevant to the WG
9:00	Discuss Revised Test Plan (S. Roy) —Revision of plan based on WG comments —Comments of Testing and Monitoring Protocol WG —Detection limits methodology —Update on possible relief from compliance action (D. McConkey) —Identification/selection of test sites —Identify next steps
10:30	BREAK
10:45	Discuss Status of Work on MACT Floor (S. Roy) —MACT floor for existing sources —Need for an emission limit (D. McConkey) —Results of operating practices review (M. Schorr) —Discuss interaction with Process Heaters WG —Identify next steps
12:15	LUNCH
1:30	Continue MACT Floor Discussion (S. Roy) —Agree on schedule to come to closure
2:30	Discuss Progress on Model Plants (S. Roy, Model Plants TG)
3:00	BREAK

3:15 Discuss Results of Followup on HAP Responses from ICR (S. Roy, K. Leach, D. Herndon)

3:30 Discuss WG/TG Schedules (TG leaders)
—Discuss schedules and deliverables (S. Roy, M. Schorr, TG leaders)
—Conformance of TG schedules with overall schedule
—Concurrence on schedules and any updates needed

3:45 Closing Business
—Discuss agenda for March WG Teleconference (S. Roy, V. Overton)
—Review flash minutes (K. Leach/D. Herndon)
—Discuss whether meeting objectives were met (WG members)

4:00 ADJOURN

ATTACHMENT III

BULLET POINT SUMMARY

Summary of ICCR Source Work Group Meeting
Combustion Turbines Work Group Meeting
Adams Mark Hotel, Winston Salem, NC
February 26, 1998

Decisions

C Consensus was reached on trying to present the test plan to the CC at the April meeting.

C The CTWG proposed the concept of excluding gas-fired turbines from the MACT regulation process and formed a task group to explore/prepare justification and documentation. Marvin Schorr is the chairperson of this task group; members are Greg Adams, Marc Phillips, Chuck Solt, Jerry Napierala, AJ Cherian, Derek Furstenwerth, John Klein, Jeff Willis, Sam Allen, Mervyn Soares, and Sims Roy.

C A new task group was formed to address detection limits. The task group is comprised of Chuck Solt, John Klein, Sims Roy, and Marvin Schorr. Kevin Johnson will serve as an observer.

C Consensus was reached on making a presentation on MACT floor recommendations to the CC at the April meeting.

Next Meeting

C The next Combustion Turbine Work Group Meeting will be a teleconference on March 18, 1998, from 1:00 - 3:00 pm, EST. The call in number is 919-541-4486.

C Items to be discussed at the next meeting may include:

- Update on the progress of the Gas-fired Turbine Task Group
- Update on the progress of the Detection Limit Task Group
- Update on the rationale developed by the subgroup of the MACT Floor Task Group
- Good operating practices
- Model plant development
- Update on the test plan

Action Items

C Chuck Solt will clarify the third party certification issue with the Pollution Prevention Subgroup

C CTWG members who are on the CC will comment on the CC minutes to ensure that they do not indicate that consensus was reached on third party certification

C The Gas-fired Turbine Task Group will update the CTWG on their progress at the March meeting and will plan to make a presentation to the CC at the April meeting

C WG members will e-mail their comments on the revised test plan to Sims Roy by Friday, March 6, 1998.

C Diane McConkey will check on relief from compliance action in light of information provided by CTWG members on instances when testing could cause violations.

C Marvin Schorr will give his comments to Gordon Brown on the good operating practices draft summary created last year in San Francisco.

C Sims Roy will circulate the documents on (operator training, maintenance, etc.) given to him by Marvin Schorr.

C A subgroup of the MACT Floor Task Group (A.J. Cherian, Greg Adams, Marvin Schorr, and Sims Roy) will begin the MACT Floor recommendation development process with a

teleconference the week of Monday, March 2. A.J. Cherian will develop an outline and an agenda for the MACT Floor recommendation development process prior to the teleconference. The objective of the teleconference will be to develop a plan to develop the MACT Floor recommendation in time for a CTWG closure presentation at the April CC meeting. A written rationale for the MACT Floor development will also be developed and posted on the TTN prior to the April CC meeting.

C Gordon Brown will make revisions to the Model Plants table and recirculate it to the WG. WG members will e-mail their suggestions on linking model turbines back to the population database.

ATTACHMENT IV

MODEL PLANT PRESENTATION

COMBUSTION TURBINES MODEL PL
DEVELOPMENT

Next Steps: Linking Model Turbines to the Popul Database

Presented to:
Combustion Turbine Work Group
Winston Salem, N.C.

Presented by:
Dan Herndon
Alpha-Gamma Technologies, Inc.

February 26, 1998

Methodology to Develop Nation and Emission Reduction Imp

- Develop model turbines
- Estimate control costs for each model tu
- Estimate emission reductions for each m turbine
- Relate the model turbines to the turbines population database
- Estimate economic impacts (EAWG)

OBJECTIVES
Model Turbine Approach

- Assign one of the model turbines tc turbine in the population database.
- Use the control costs and emission reductions estimated for the model to evaluate national impacts.

MODEL TURBINE PARAME

Turbine Parameter	Population Da
• Fuel Type	• Fuel Type
• Unit Size	• Capacity, M
• Operating Hours/Year	• Hours of Op
• Heat Recovery (Y/N)	• Not Availab
• Typical Applications	• SIC/SCC
• Location (Space Constrained?)	• No space co info in datab

PROBLEM

- Information is generally missing for one
  of the parameters (e.g., make & model, s
  for the turbines in the population databas
- These data gaps will have to be filled usi
  - CTWG expertise
  - Database queries

FILLING DATA GAPS
UNIT SIZE

- Available Information
  - Capacity field is about 34% populated
  - Make & model fields are about 8% populated
- Approach for Filling Data Gaps
  - Relate size to turbine application
  - Other database fields that could be related to turbine
  - Using database queries:
    - Determine size distributions for the entire population (turbines with size info) and for different SICs.
    - Using these distributions, randomly assign sizes (e.g., and small) to turbines without size info

FILLING DATA GAPS
OPERATING HOURS

- Available Information
  - Hours of operation field is about 84% populated
- Approach for Filling Data Gaps
  - Search “combustor description” field using keywords the CTWG
  - Use CTWG criteria to differentiate between full-time and standby/emergency (500 or 200 hr/yr) turbines in population database
  - Using database queries:
    - Determine distribution in operating hours for the entire (i.e., all turbines with size info) and for different SICs
    - Using these distributions, randomly assign operating ho where this info is missing

FILLING DATA GAPS
HEAT RECOVERY

- Available Information
  - Heat recovery information is not available i population database
- Approach for Filling Data Gaps
  - Search “combustor description” field using identified by the CTWG
  - Use other criteria developed by the CTWG
    - relate to other turbine parameters, such as size o
    - use ratio of combined cycle vs simple cycle

FILLING DATA GAPS
SPACE CONSTRAINTS

- Available Information
  - Space constraint information is not available in the pc database
- Approach for Filling Data Gaps
  - Search “combustor description” field using keywords the CTWG
  - Can application be used to identify turbines more like constrained
  - Based on CTWG estimates, tag a certain % of turbine population database as being space constrained

NEXT STEPS

- Establish teams to develop criteria/approaches data gaps
- Develop database queries to generate distributi parameters in the population database (e.g., siz hours, etc.)